

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. *(Currently Amended)* An article for inhibiting the growth of microbes in ~~biological and~~ physiological fluids, said article comprising:
 a fluid permeable fibrous layer for absorbing said physiological fluids;
 a fluid permeable polymer having a support structure and comprising derivatized particles each having an attached metal-ion sequestrant for inhibiting the growth of said microbes in the physiological fluids, wherein the derivatized particles have a stability constant greater than 10^{10} with iron (III); and
 a fluid permeable barrier layer, between the fibrous layer and the polymer, for permitting said physiological fluids to pass therethrough and for preventing the microbes from passing therethrough.
2. *(Currently Amended)* An article according to claim 1 further comprising an anti-stick layer adjacent the fibrous layer for preventing the article from sticking to a wound and a support layer adjacent the polymer for supporting the article in contact with a person's body over the wound, and wherein said support layer comprises a material selected from ~~structure is made of~~ fibers, fabric, textiles, plastic or paper.
3. *(Currently Amended)* An article according to claim 1 wherein said metal-ion sequestrant is derivatized particles are immobilized in the polymer and ~~has on the support structure and~~ have a stability constant greater than 10^{10} with high affinity for biologically important metal-ions including such as Mn, Zn, Cu and Fe.

4. **(Currently Amended)** An article according to claim 1 wherein said metal-ion sequestrant is derivatized particles are immobilized on the support layer structure and ~~has~~ have a difference in log stability constants greater than 4 as between high selectivity for biologically important metal-ions including such as Mn, Zn, Cu, and Fe and beneficial metal-ions including potassium and calcium.

5. - 6. **(Canceled)**

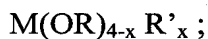
7. **(Currently Amended)** An article according to claim 1 wherein said derivatized particles comprise derivatized nanoparticles comprising inorganic nanoparticles each having an attached metal-ion sequestrant, wherein said inorganic nanoparticles have an average particle size of less than 200 nm ~~and the derivatized nanoparticles have a stability constant greater than 10^{10} with iron (III).~~

8. **(Currently Amended)** An article according to claim 7 wherein ~~derivatized nanoparticles comprise inorganic nanoparticles having an attached metal-ion sequestrant, wherein said inorganic nanoparticles have an average particle size of less than 200 nm and the derivatized nanoparticles have a stability constant greater than 10^{20} with iron (III).~~

9. **(Currently Amended)** An article according to claim 7 wherein said inorganic nanoparticles are selected from ~~comprise~~ silica oxides, alumina oxides, boehmites, titanium oxides, zinc oxides, tin oxides, zirconium oxides, yttrium oxides, hafnium oxides, clays, or ~~and~~ alumina silicates.

10. **(Currently Amended)** An article according to claim 1 wherein said metal-ion sequestrant is selected from ~~comprises~~ an alpha amino carboxylate, a hydroxamate, or a catechol functional group.

11. **(Currently Amended)** An article according to claim 1 wherein the metal-ion sequestrant is attached to a ~~the~~ particle, by reacting the particle with a metal alkoxide intermediate of the sequestrant having the general formula:



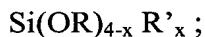
wherein M is silicon, titanium, aluminum, tin, or germanium;

x is an integer from 1 to 3;

R is an organic group; and

R' is an organic group containing an alpha amino carboxylate, a hydroxamate, or a catechol.

12. **(Currently Amended)** An article according to claim 1 wherein said metal-ion sequestrant is attached to a ~~the~~ particle by reacting the particle with a silicon alkoxide intermediate of the sequestrant having the general formula:



wherein x is an integer from 1 to 3;

R is an alkyl group; and

R' is an organic group containing an alpha amino carboxylate, a hydroxamate, or a catechol.

13. **(Canceled)**

14. **(Currently Amended)** An article according to claim ~~1~~ 13 wherein the polymer is permeable to water.

15. **(Currently Amended)** An article according to claim 1 ~~43~~ wherein the polymer comprises one or more of polyvinyl alcohol, cellophane, water-based polyurethanes, polyester, nylon, high nitrile resins, polyethylene-polyvinyl alcohol copolymer, polystyrene, ethyl cellulose, cellulose acetate, cellulose nitrate, aqueous latexes, polyacrylic acid, polystyrene sulfonate, polyamide, polymethacrylate, polyethylene terephthalate, polystyrene, polyethylene and polypropylene or polyacrylonitrile.

16. **(Original)** An article according to claim 7 wherein said inorganic nanoparticles have a specific surface area of greater than 100 m²/g.

17. **(Currently Amended)** An article according to claim 1 ~~43~~ ~~further comprising a barrier layer~~ wherein the polymer ~~polymeric layer~~ is disposed between ~~a~~ the surface of the article and the barrier layer and wherein the barrier layer does not contain the derivatized nanoparticles.

18. **(Original)** An article according to claim 17 wherein the barrier layer is permeable to water.

19. **(Currently Amended)** An article according to claim 17 wherein the barrier layer has a thickness in the range of about 0.1 microns to about 10.0 microns.

20. **(Original)** An article according to claim 17 wherein the barrier layer comprises one or more of polyvinyl alcohol, cellophane, water-based polyurethanes, polyester, nylon, high nitrile resins, polyethylene-polyvinyl alcohol copolymer, polystyrene, ethyl cellulose, cellulose acetate, cellulose nitrate, aqueous latexes, polyacrylic acid, polystyrene sulfonate, polyamide, polymethacrylate, polyethylene terephthalate, polystyrene, polyethylene and polypropylene or polyacrylonitrile.

21. **(Canceled)**
22. **(Currently Amended)** An article according to claim 1 where said article is designed to be placed against a ~~the~~ skin of an individual.
23. **(Currently Amended)** An article according to claim 1 ~~22~~ wherein said article comprises a bandage.
24. **(Currently Amended)** An article according to claim 23 wherein said ~~bandage includes a liquid permeable barrier layer~~ allows for allowing said ~~biological or physiological fluids to come in contact with said derivatized~~ particles.
25. **(Original)** An article according to claim 1 wherein said article comprises a diaper.
26. **(Canceled)**
27. **(Original)** An article according to claim 1 wherein said article is designed to be placed within a living animal.
28. **(Original)** An article according to claim 1 wherein said article is designed to be placed within an individual.
29. **(Original)** An article according to claim 28 wherein said article comprises a tampon.
30. **(Original)** An article according to claim 28 wherein said article comprises a gauze.

31. **(Original)** A method for inhibiting growth of microbes in biological and physiological fluids, comprising the steps of:

- a. providing an article having a support structure and derivatized particles having an attached metal-ion sequestrant for inhibiting the growth of said microbes, wherein the derivatized particles have a stability constant greater than 10^{10} with iron (III); and
- b. placing said article in contact with said biological and/or said physiological fluid so that the growth of microbes is inhibited in said biological and/or said physiological fluid.

32. **(Original)** A method according to claim 31 wherein said support structure is made of fibers, fabric, textiles, plastic or paper.

33. **(Currently Amended)** A method according to claim 31 further comprising the step of immobilizing ~~wherein~~ said derivatized particles ~~are immobilized~~ on the support structure and wherein said metal-ion sequestrant has ~~have~~ a stability constant greater than 10^{10} with ~~high affinity for biologically important~~ metal-ions including such as Mn, Zn, Cu and Fe.

34. **(Currently Amended)** A method according to claim 31 further comprising the step of immobilizing ~~wherein~~ said derivatized particles ~~are immobilized~~ on the support structure and wherein said metal-ion sequestrant has ~~have~~ a difference in log stability constants greater than 4 as between ~~high selectivity for~~ biologically important metal-ions including such as Mn, Zn, Cu, and Fe and beneficial metal-ions including potassium and calcium.

35. **(Original)** A method according to claim 31 wherein said derivatized particles are immobilized on the support structure and have a stability constant greater than 10^{20} with iron (III).

36. **(Original)** A method according to claim 31 wherein said derivatized particles are immobilized on the support structure and have a stability constant greater than 10^{30} with iron (III).

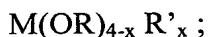
37. **(Original)** A method according to claim 31 wherein said derivatized particles comprise derivatized nanoparticles comprising inorganic nanoparticles having an attached metal-ion sequestrant, wherein said inorganic nanoparticles have an average particle size of less than 200 nm and the derivatized nanoparticles have a stability constant greater than 10^{10} with iron (III).

38. **(Original)** A method according to claim 37 wherein derivatized nanoparticles comprise inorganic nanoparticles having an attached metal-ion sequestrant, wherein said inorganic nanoparticles have an average particle size of less than 200 nm and the derivatized nanoparticles have a stability constant greater than 10^{20} with iron (III).

39. **(Currently Amended)** A method according to claim 37 wherein said inorganic nanoparticles are selected from ~~comprise~~ silica oxides, alumina oxides, boehmites, titanium oxides, zinc oxides, tin oxides, zirconium oxides, yttrium oxides, hafnium oxides, clays, or ~~and~~ alumina silicates.

40. **(Original)** A method according to claim 31 wherein said metal-ion sequestrant comprises an alpha amino carboxylate, a hydroxamate, or a catechol functional group.

41. **(Original)** A method according to claim 31 wherein the metal-ion sequestrant is attached to the particle, by reacting the particle with a metal alkoxide intermediate of the sequestrant having the general formula:



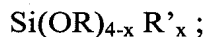
wherein M is silicon, titanium, aluminum, tin, or germanium;

x is an integer from 1 to 3;

R is an organic group; and

R' is an organic group containing an alpha amino carboxylate, a hydroxamate, or a catechol.

42. **(Original)** A method according to claim 31 wherein said metal-ion sequestrant is attached to the particle by reacting the particle with a silicon alkoxide intermediate of the sequestrant having the general formula:



wherein x is an integer from 1 to 3;

R is an alkyl group; and

R' is an organic group containing an alpha amino carboxylate, a hydroxamate, or a catechol.

43. **(Original)** A method according to claim 31 wherein the article is replaced after a predetermined time period.

44. **(Original)** A method according to claim 31 wherein said support structure further comprises a polymeric layer containing said derivatized particles.

45. **(Original)** A method according to claim 31 where said article is designed to be placed against the skin of an individual.

46. **(Original)** A method according to claim 45 wherein said article comprises a bandage.

47. **(Original)** A method according to claim 46 wherein said bandage included a liquid permeable barrier layer for allowing said biological or physiological fluids to come in contact with said derivatized particles.

48. **(Original)** A method according to claim 31 wherein said article comprises a diaper.

49. **(Original)** A method according to claim 48 wherein said diaper includes a liquid permeable member for allowing said biological or physiological fluids to come in contact with said derivatized particles.

50. **(Original)** A method according to claim 31 wherein said article is designed to be placed within a living animal.

51. **(Original)** A method according to claim 31 wherein said article is designed to be placed within an individual.

52. **(Original)** A method according to claim 51 wherein said article comprises a tampon.

53. **(Original)** A method according to claim 51 wherein said article comprises a gauze.

54. **(New)** A bandage for inhibiting growth of microbes in physiological fluids, said bandage comprising:

a fluid permeable fibrous layer for absorbing said physiological fluids and comprising derivatized particles each having an attached metal-ion sequestrant for inhibiting the growth of said microbes in the physiological fluids, wherein the derivatized particles have a stability constant greater than 10^{10} with iron (III);

a fluid permeable barrier layer adjacent the fibrous layer for permitting said physiological fluids to pass therethrough and for preventing the microbes from passing therethrough; and

a support layer adjacent the fibrous layer for supporting the fibrous layer against the barrier layer and for supporting the barrier layer in contact with a person's body.

55. **(New)** The bandage of claim 54 wherein the support layer further comprises an adhesive for adhering to the person's body.

56. **(New)** The bandage of claim 54 wherein the barrier layer comprises an anti-stick polymer for preventing the bandage from sticking to a wound.

57. **(New)** The bandage of claim 54 wherein the fibrous layer comprises gauze.

58. *(New)* The bandage of claim 54 wherein the fibrous layer further comprises an antimicrobial agent for inhibiting the growth of said microbes in the physiological fluids